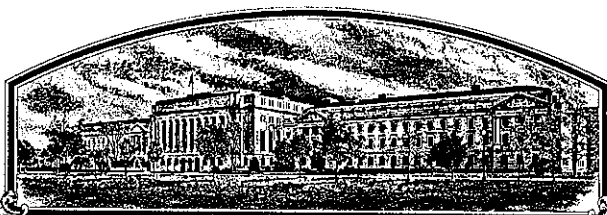


No.

8600081



THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Busch Agricultural Resources, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS SEED OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'B1202'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D. C. this 31st day of December in the year of our Lord one thousand nine hundred and ninety.

Attest:

Kenneth H. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Clayton Fentler
Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Busch Agricultural Resources, Inc.		2. TEMPORARY DESIGNATION 2B81-4038		3. VARIETY NAME B1202	
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 806 N. 2nd Street Berthoud, Colorado 80513		5. PHONE (Include area code) (303) 532-3721		FOR OFFICIAL USE ONLY PVPO NUMBER 8600081	
6. GENUS AND SPECIES NAME Hordeum vulgare L.		7. FAMILY NAME (Botanical) Gramineae		FILING DATE March 17, 1986 TIME 10:00 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
8. KIND NAME Spring Barley		9. DATE OF DETERMINATION March 1, 1978 March 1, 1980		AMOUNT FOR FILING \$ 1800.00 DATE March 17, 1986	
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation				AMOUNT FOR CERTIFICATE \$ 200.00 DATE Dec. 21, 1990	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware				12. DATE OF INCORPORATION 1-1-81	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS Dr. Melvern K. Anderson or C. Bruns Busch Agricultural Resources, Inc. Nickerson American Plant Breeders Inc. 806 N. 2nd Street 806 N. 2nd Street Berthoud, CO 80513 Berthoud, Colorado 80513 (303) 532-3721 PHONE (Include area code):					
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED					
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.)					
b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement.					
c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.)					
d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety.					
e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership. Exhibit F, Quality Data					
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input checked="" type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input type="checkbox"/> No					
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input checked="" type="checkbox"/> Foundation <input checked="" type="checkbox"/> Registered <input checked="" type="checkbox"/> Certified		
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No					
19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No					
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.					
SIGNATURE OF APPLICANT Melvern K. Anderson, Busch Agr. Res., Inc.				DATE 2/26/86	
SIGNATURE OF APPLICANT				DATE	

EXHIBIT A

Origin and Breeding History of B1202 (2B81-4038; BA4038)

Pedigree: RPB70-268/2B75-1223//Klages

Date of Cross: The first single cross was made in the spring 1978 greenhouse; the three way cross was completed in the fall 1978 greenhouse; the F1 was grown in the spring 1979 greenhouse to produce F2 seed.

History: F2 plants were grown at Twin Falls, Idaho in 1979. A single seed from an F2 head selection was advanced by single seed descent in the fall 1979 greenhouse. An F4 head-row was selected in Nampa, Idaho in 1980. Malting quality tests on remnant F4 seed assisted in the selection of an F5 seed increase plot in Christchurch, New Zealand for yield testing an F2 derived F6 bulk a Berthoud, Colorado in 1981. This line was advanced to second year yield trials in 1982. In 1983 100 head selections were made to initiate purification and multiplication. These 100 head-rows were grown in 1984 and 97 rows were selected. These 97 head-rows were replanted as head-rows in 1985 and 88 were selected to harvest for bulk Breeder seed.

This seed served as the pure seed source and yield trial source. B1202 has been tested as BA 4038 in the Western Spring Barley Nursery in 1985. B1202 has been tested in the Intermountain and Western barley growing states of Colorado, Wyoming, Idaho, Montana, Nebraska, Oregon and California as BA4038 by state or federal barley breeding programs.

Purification was initiated in 1984. There were 100 head-rows grown at our Berthoud, Colorado location and 97 were selected. These were replanted as head-rows in 1985 and 88 were selected to harvest for bulk Breeder seed. Foundation seed was produced during the winter of 1985-86 at Yuma, Arizona.

Future head-rows will be grown as necessary to constitute Breeder seed. The two seed production fields to date have been stable and uniform.

EXHIBIT B.

NOVELTY STATEMENT

B1202 is most similar to the spring barley variety "Clark", however it can be distinguished by the following morphological characteristics:

- B1202 has few teeth on the lateral veins of the kernel. Clark has no teeth on the lateral veins of the kernel.
- B1202 has a lax head density. Clark has a mid-lax head density.
- B1202 has a more nodding head type than Clark, (see following page).

STATISTICAL TABLE FOR NODDING HEAD

<u>Variety</u>	<u>Mean</u>	<u>Sd</u>	<u>d</u>	<u>n</u>	<u>t</u>
B1202	2.6	0.2784	0.896	9	3.22*
Clark	3.4				

* The probability that the difference in means of nodding head is significant at the 5% level.

STATISTICAL TABLE FOR HEADING DATE

<u>Variety</u>	<u>Mean</u>	<u>Sd</u>	<u>d</u>	<u>n</u>	<u>t</u>
B1202	165.4	0.602	1.7	9	2.824*
Klages	167.1				

* The probability that the difference in means of heading date is significant at the 5% level.

STATISTICAL TABLE FOR PLANT HEIGHT

<u>Variety</u>	<u>Mean</u>	<u>Sd</u>	<u>d</u>	<u>n</u>	<u>t</u>
B1202	73.2	1.408	3.5	8	2.486*
Klages	76.7				

* The probability that the difference in means of plant height is significant at the 5% level.

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Barley)

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY (*HORDEUM VULGARE*)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)

Busch Agricultural Resources, Inc.

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)

806 N. 2nd Street
Berthoud, Colorado 80513

FOR OFFICIAL USE ONLY

PVPO NUMBER

8600081

VARIETY NAME OR TEMPORARY DESIGNATION

B1202

Place the appropriate number that describes the varietal character of this variety in the boxes below.

Place a zero in first box (i.e. 089 or 09) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

1 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER 3 Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT

2. MATURITY (50% Flowering):

1 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier)

2 No. of days Earlier than 8 } Equal to Clark (9)
1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON
 No. of days Later than 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = Klages 9 = Clark

3. PLANT HEIGHT (From soil level to top of head):

3 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest)

4 Cm. Shorter than 8 } 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON
 Cm. Taller than 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = Klages

4. STEM:

2 Exertion (Flag to spike at maturity): 1 = 0 - 3 cm. 2 = 3 - 10 cm. 1 Anthocyanin: 1 = ABSENT 2 = PRESENT
3 = 10 - 15 cm.

0 5 NO. OF NODES (Originating from node above ground)

2 Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN 1 Shape of Neck: 1 = STRAIGHT 2 = SNAKY
4 = MODIFIED CLOSED OR OPEN 3 = OTHER (Specify)

5. LEAF:

1 Basal leaf sheath (seedling): 1 = GLABROUS 2 = PUBESCENT 2 Position of flag leaf (at boot stage): 1 = DROOPING 2 = UPRIGHT

2 Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 1 4 MM. WIDTH (First leaf below flag leaf)
3 = WAXY

2 6 CM. LENGTH (First leaf below flag leaf) 1 Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD:

1 Type: 1 = TWO-ROWED 2 = SIX-ROWED 1 Density: 1 = LAX 2 = ERECT (Not dense)
3 = ERECT (Dense)

2 Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 2 Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY
4 = OTHER (Specify) 3 = WAXY

-- Lateral Kernels Overlap: 1 = NONE 2 = AT TIP 3 Rachis (Hair on edge): 1 = LACKING 2 = FEW 3 = COVERED
3 = 1/4 - 1/2 OF HEAD

7. GLUME:

2 Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 Hairs: 1 = NONE 2 = SHORT 3 = LONG
3 = MORE THAN 1/2 OF LEMMA

4 Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED

2 Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES
3 = MORE THAN EQUAL TO LENGTH OF GLUMES

3 Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

8. LEMMA:

☐ 5 Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS
 3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike)
 5 = LONG (longer than spike) 6 = HOODED

☐ 3 Awn Surface: 0 = AWNLESS 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

☐ 2 Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS ☐ 1 Hair: 1 = ABSENT 2 = PRESENT

☐ 1 Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE ☐ 2 Rachilla Hairs: 1 = SHORT 2 = LONG

9. STIGMA:

☐ 2 Hairs: 1 = FEW 2 = MANY

10. SEED:

☐ 2 Type: 1 = NAKED 2 = COVERED ☐ 1 Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

☐ 3 Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.)
 4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

☐ 2-3 Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

☐ 1 Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

☐ 0 ☐ 0 PERCENT ABORTIVE

☐ 4 ☐ 0 GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3 = Moderately Susceptible 4 = Moderately Resistant

<input type="checkbox"/> 0 SEPTORIA	<input type="checkbox"/> 3 NET BLOTCH	<input type="checkbox"/> 0 SPOT BLOTCH	<input type="checkbox"/> 4 POWDERY MILDEW
<input type="checkbox"/> 0 LOOSE SMUT	<input type="checkbox"/> 0 BACTERIAL BLIGHT	<input type="checkbox"/> 0 COVERED SMUT	<input type="checkbox"/> 0 FALSE LOOSE SMUT
<input type="checkbox"/> 0 STEM RUST	<input type="checkbox"/> 0 LEAF RUST	<input type="checkbox"/> 0 SCAB	<input type="checkbox"/> 0 SCALD
<input type="checkbox"/> 0 AY	<input type="checkbox"/> 0 BSMV	<input type="checkbox"/> 0 BYDV	<input type="checkbox"/> -- OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible, 2 = Resistant)

<input type="checkbox"/> 0 GREEN BUG	<input type="checkbox"/> 0 ENGLISH GRAIN APHID	<input type="checkbox"/> 0 CHINCH BUG	<input type="checkbox"/> 0 ARMYWORM
<input type="checkbox"/> 0 GRASS HOPPERS	<input type="checkbox"/> 0 CEREAL LEAF BEETLE	<input type="checkbox"/> -- OTHER (Specify)	
HESSIAN FLY RACES		<input type="checkbox"/> 0 GP	<input type="checkbox"/> 0 A
		<input type="checkbox"/> 0 B	<input type="checkbox"/> 0 C
		<input type="checkbox"/> 0 D	<input type="checkbox"/> 0 E
		<input type="checkbox"/> 0 F	<input type="checkbox"/> 0 G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

☐ 0 DDT ☐ -- OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Clark	Seed size	Clark
Leaf size	Clark	Coleoptile elongation	Clark
Leaf color	Clark	Seedling pigmentation	Clark
Leaf carriage	Clark		

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

EXHIBIT D.

ADDITIONAL DESCRIPTION B1202

B1202 is a two-rowed spring barley developed by Busch Agricultural Resources, Inc. It is early in maturity and has excellent malting quality.

B1202 has an erect to semi-erect juvenile growth habit. The spike is lax in density with a nodding head type. Lemma awn is long and rough. Rachilla, rachis and glume hairs are all long. The glumes are completely covered with hair and the glume awns are equal to the length of the glume. The aleurone is colorless and the hull is adhering and slightly to semi-wrinkled.

B1202 is adapted to the intermountain west area from Montana, to Washington and extending down to Colorado.

EXHIBIT E.

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Busch Agricultural Resources, Inc. is the applicant for protection in this case being:

- a. The incorporated business registered in Delaware for and within which regular employees have bred B1202.
- b. The proprietary owner and intending commercial seller of B1202.

EXHIBIT F.
QUALITY DATA B1202

Quality Summary For B1202

VARIETY OR LINE	% PLUMP	MALT	PROTEIN WORT	W/T	EXT	D.P.	DP/ PRO	A.A
B1201	84	11.8	4.4	37	80.7	84	7.1	35
B1202	86	12.3	4.4	36	80.3	109	8.9	43
KLAGES	75	12.5	4.6	37	79.8	97	7.8	34

12/02/85

djt